

II. Amendments to the Specification

Please amend Paragraph 19 as follows:

[0019] Alternatively, an "etch stop" layer or DBL 113 can be used for etching the hole and trench, as shown in Fig. 2. A first ILD layer 114A is deposited over the DBL 106A, ~~where~~ and the thickness of ILD layer is reduced to a predetermined thickness approximately the height of the via 110. The ILD layer 114A is patterned and etched to create the via hole 110. The portion of the DBL over the via hole is also etched to expose the underlying metal line. The DBL 113 is deposited over the ILD layer 114A, followed by deposition of a second ILD layer 114B, wherein the second ILD layer 114B reaches a predetermined height. The second ILD layer 114B is then patterned and etched to create the trench 112. And, a second DBL 106B can also be deposited to seal the metal in the ILD layers 114A and 114B. The DBL layer 113 is also known as an etch stop layer because it prevents the etching of the second ILD layer 114B from continuing into the first ILD layer 114A. As it may be appreciated by one skilled in the art, the layers 106A, 114A, 113, and 114B can be all stacked up and the etching processes can be conducted from top down in multiple steps to make the via 110 and trench 112. It is noticed that although not shown in Fig. 2, a sidewall diffusion barrier layer like the one in Fig. 1E can also be formed on the sidewalls of the via and trench regions for blocking metal diffusion.

Please amend Paragraph 20 as follows:

[0020] For example, after the etch processes creating the via hole and trench are completed, a metallic (conductive) diffusion barrier deposition (not shown) is created. Over the metallic diffusion barrier layer, a Cu seed layer is deposited, typically about 1500 ~~ANG.~~ Å thick. The Cu seed is deposited so as to allow electroplated Cu to fill the trench and the via hole without voids. The next step is the electroplating or the electrofill of the trench and the via hole, as is known to those skilled in the art. Once the Cu fill is completed, a desired line and via are formed in the trench and via hole, respectively. The above described process can then be repeated to form a desired multi-level structure.

PATENT
EXPRESS MAIL LABEL NO. EV690214873US

ATTORNEY DOCKET NO.: N1280-00025
[TSMC2002-1189]